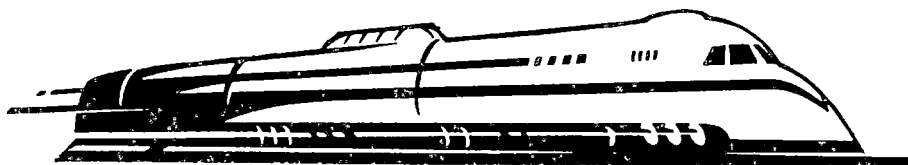
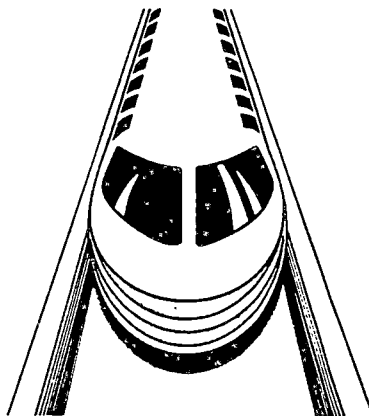

PRELIMINARY PROGRAM



WORKSHOP ON SAFETY RESEARCH RELATED TO HIGH-SPEED RAIL AND MAGLEV PASSENGER SYSTEMS



October 18-20, 1993

*Nordic Hills Resort and Conference Center
Itasca, Illinois*



*TRANSPORTATION RESEARCH BOARD
NATIONAL RESEARCH COUNCIL*

FEDERAL RAILROAD ADMINISTRATION



WORKSHOP
on
SAFETY RESEARCH RELATED TO HIGH-SPEED
RAIL AND MAGLEV PASSENGER SYSTEMS

■ **Sponsored By** ■

Transportation Research Board
National Research Council

Federal Railroad Administration

■ **Conference Steering Committee** ■

William W. Dickhart, III, Chairman, Thyssen Henschel

Roy A. Allen, Association of American Railroads

John A. Bachman, New Bern, North Carolina

Janie Page Blanchard, Bechtel Corporation

Brenda Myers Bohlke, Parsons Brinckerhoff

Nazih K. Haddad, Florida Department of Transportation

Myles B. Mitchell, M.B. Mitchell & Associates, Inc.

Paul H. Reistrup, Railroad Development Corporation

Richard A. Uher, Carnegie Mellon Research Institute

■ **Liaison Representative** ■

Arne Bang, Federal Railroad Administration

■ **Transportation Research Board Staff** ■

Elaine King

■ **Background and Purpose** ■

In many areas of the country, potential U.S. applications for high-speed rail and maglev technologies are being considered. The Federal Railroad Administration (FRA) of the U.S. Department of Transportation has statutory responsibility to assure the safe operations of intercity high-speed rail and maglev passenger systems, but its existing regulations govern only conventional systems and do not address many unique features of the more advanced technologies. In April 1991, TRB and FRA jointly sponsored a workshop to identify safety factors related to high-speed rail and maglev that required additional research prior to FRA's development of safety regulations for these new technologies. The research needs identified at this workshop became input for FRA's safety research program.

On October 18-20, 1993, TRB and FRA will co-sponsor a second workshop to provide updates on FRA's recently completed and in-progress research on safety aspects of high-speed rail and maglev passenger systems. The workshop format will provide an opportunity for participants to critique completed and ongoing research, to identify gaps in the research, and to suggest priorities for future research efforts. Workshop discussion groups will focus on the following topics: generic high-speed guided ground transportation safety issues; electromagnetic field effects; power and braking systems; control systems; and structural and mechanical systems. Workshop attendees will include federal, state, and local government officials, academicians, consultants, rail labor organizations, and equipment suppliers.

■ **Registration Information** ■

As a special TRB activity, this workshop must be self-supporting; therefore, a registration fee will apply to all who attend. The advance registration fee is \$150.⁰⁰ until September 17, 1993. After September 17, the registration fee will be \$200.⁰⁰. The registration fee will cover admission to the workshop, two continental breakfasts, two lunches, and a copy of the conference proceedings. (Nordic Hills will host the opening reception on October 18.)

The attached registration form and fee must be returned to TRB by September 17, 1993. For more information on registration, please contact Reggie Gillum, TRB, 2101 Constitution Avenue, N.W., Washington, D.C. 20418, or by phone at 202/334-2382, or by fax at 202/334-2003.

Checks should be made payable to the Transportation Research Board/HSRML. Payment must be made in U.S. funds drawn on a U.S. bank or by international money order. VISA, American Express, and Mastercard will also be accepted. Confirmation of registration will be transmitted by mail, time permitting, or will be available at the workshop.

■ **Accommodations** ■

The workshop will be held at the Nordic Hills Resort and Conference Center, Itasca, Illinois, conveniently located near Chicago's O'Hare International Airport. (See "Transportation to the Hotel" below.) The room rate is \$80.⁰⁰ single or double. Hotel reservations must be made directly with Nordic Hills by September 18, 1993. Reservations received after that date will be confirmed on a space available basis only. Please return the attached reservation form directly to Nordic Hills or call 1-800-334-3417. Be sure to state that you are attending the Transportation Research Board Workshop on Safety Research Related to High-Speed Rail and Maglev Passenger Systems.

■ **Transportation to the Hotel** ■

American Limousine provides transportation to Nordic Hills from both O'Hare and Midway airports. Their shared ride rates are \$14.⁰⁰ + \$2.⁰⁰ tax per person from O'Hare Airport and \$17.⁰⁰ + \$2.⁰⁰ tax per person from Midway. Private cars are available for an additional charge. Advance reservations should be made by calling American Limousine at 708/920-8888. Upon arrival at either airport, pick up your luggage, and then call American Limousine at 1-800-762-6888. You will need to provide their dispatcher with the following information: your name, confirmation number, destination, and method of payment (cash, any major credit card, or company charge). The dispatcher will give you directions to locate the American Limousine car.

PRELIMINARY PROGRAM

MONDAY, OCTOBER 18

4:00 p.m. – 8:00 p.m. **REGISTRATION**

6:00 p.m. - 7:00 p.m. **RECEPTION** (*Hosted by Nordic Hills*)

TUESDAY, OCTOBER 19

7:00 a.m. **Registration Opens**

7:30 a.m. - 8:00 a.m. **Continental Breakfast**

8:00 a.m. - 9:30 a.m. **Plenary Session**

WELCOME

William W. Dickhart, III
Chair, Workshop Steering Committee

- **Recent Research Activities: High-Speed Rail and Maglev Passenger Systems**
Arne Bang, Federal Railroad Administration

OVERVIEW

Workshop Discussion Issues

- **Generic HSGGT Safety Issues**
Nazih K. Haddad, Federal Railroad Administration
- **Electromagnetic Field Effects**
Janie Page Blanchard, Bechtel Corporation
- **Power and Braking Systems**
Richard A. Uher, Carnegie Mellon Research Institute
- **Control Systems**
Paul H. Reistrup, Railroad Development Corporation
- **Structural and Mechanical Systems**
Brenda M. Bohlke, Parsons Brinckerhoff

9:30 a.m. - 10:00 a.m. **BREAK**

10:00 a.m. - 12:00 p.m. **CONCURRENT WORKSHOP SESSIONS**

SESSION 1 - Generic HSGGT Safety Issues
Nazih K. Haddad, Session Leader

- **Maglev System Concept Definition (SCD) System Safety Review**
Thomas C. Griego, Booz-Allen & Hamilton, Inc.
- **Emergency Preparedness Guidelines for Passenger Trains**
Stephanie Markos, Volpe National Transportation Systems Center
- **Collision Avoidance and Accident Survivability**
David Tyrell, Volpe National Transportation Systems Center

- **Human Factors and Automation in HSGGT Systems**
Thomas Sheridan, *Massachusetts Institute of Technology*
- **Fire Safety of Passenger Trains**
Richard W. Bukowski, *National Institute of Standards and Technology*

SESSION 2 - Electromagnetic Field Effects

Janie Page Blanchard, Session Leader

- **Potential Biological Effects of Electromagnetic Fields Associated with Maglev and Other Mass Transit-Type Rail Systems**
Robert B. Goldberg, *Information Ventures*
- **Broadband Magnetic Fields: Their Possible Role in EMF-Associated Bioeffects**
Norbert Hankin, *Environmental Protection Agency*
- **Maglev Spectrum EMF Exposure Effects on Pineal Indoleamine Metabolism**
Kenneth R. Groh, *Argonne National Laboratory*
- **EMF Measurements on Various Rail Systems**
William E. Feero, *Electronic Research and Management*
- **EMF Exposures and Regulatory Overview**
Lynne Gillette, *Environmental Protection Agency*
- **Magnet Safety and Design Studies**
Aviva Brecher, *Volpe National Transportation Systems Center*

SESSION 3 - Power and Braking Systems

Richard A. Uher, Session Leader

- **Electrical Safety Regulations**
Robert Dorer, *Volpe National Transportation Systems Center*
- **Safety Implications of Propulsion Power in High-Speed Systems**
Frank Raposa, *Acton, Massachusetts*
- **Operation of Passenger Trains in Freight Railroad Corridors**
Speaker to be Announced
- **Advanced Braking System Safety**
Jeffrey Gordon, *Volpe National Transportation Center*

SESSION 4 - Control Systems

Paul H. Reistrup, Session Leader

- **Analysis of Railroad Signaling System: Microprocessor Interlocking**
Jeffrey Gordon, *Volpe National Transportation Systems Center*
- **Sensor Systems for Monitoring Maglev Guideway Structures**
John Bower, *Babcock & Wilcox*
- **Evaluation of Concepts for Safe Speed Enforcement**
Jonathan Luedeke, *Battelle Columbus*
- **Maglev Guideway and Route Integrity Requirements**
Steve Carlton, *Martin Marietta*
- **Methodology for Safety Validation of Computer Control Systems**
Jonathan Luedeke, *Battelle Columbus*

SESSION 5 - Structural and Mechanical Systems

Brenda M. Bohlke, Session Leader

■ **Maglev Guideway Route Alignment and Right-of-Way Requirements**

Steve Carlton, *Martin Marietta*

■ **Barrier Designs Between HSGGT and Adjoining Transportation Systems**

Paul Moyer, *Parson Brinckerhoff*

■ **Highway-Rail Grade Crossings Hazard Elimination: Problem Definition**

John Bachman, *Applied Systems Technologies, Inc.*

■ **Grade Crossings in High-Speed Corridors: State-of-the-Art Survey**

Anya Carroll, *Volpe National Transportation Systems Center*

■ **Thermal Response Analysis of TransRapid-Type Guideway Structure**

Andrew Kish, *Volpe National Transportation Systems Center*

Gopal Samavedam, *Foster-Miller, Inc.*

12:00 p.m. - 1:30 p.m.	LUNCH
1:30 p.m. - 3:00 p.m.	CONCURRENT WORKSHOP DISCUSSION GROUPS
3:00 p.m. - 3:30 p.m.	BREAK
3:30 p.m. - 5:00 p.m.	CONCURRENT WORKSHOP DISCUSSION GROUPS

WEDNESDAY, OCTOBER 20

7:30 a.m. - 8:00 a.m. CONTINENTAL BREAKFAST

8:00 a.m. - 10:00 a.m. **Plenary Session: In-Progress Reports from Concurrent Discussion Groups**

Session 1 - Generic HSGGT Safety Issues

Nazih K. Haddad

Session 2 - Electromagnetic Field Effects

Janie Page Blanchard

Session 3 - Power and Braking Systems

Richard A. Uher

Session 4 - Control Systems

Paul H. Reistrup

Session 5 - Structural and Mechanical Systems

Brenda M. Bohlke

10:00 a.m. - 10:30 a.m. BREAK

10:30 a.m. - 12:00 p.m. CONCURRENT WORKSHOP DISCUSSION GROUPS

12:00 p.m. - 1:30 p.m.	LUNCH
1:30 p.m. - 2:30 p.m.	CONCURRENT WORKSHOP DISCUSSION GROUPS Prepare Summary Statements
2:30 p.m. - 3:00 p.m.	BREAK
3:00 p.m. - 5:00 p.m.	PLENARY SESSION Presentation of Summary Reports from Five Discussion Groups
5:00 p.m.	WORKSHOP ADJOURNS

TRB Workshop on Safety Research Related to High-Speed Rail and Maglev Passenger Systems
October 18-20, 1993
Nordic Hills Resort and Conference Center
Itasca, Illinois

▼ Workshop Registration ▼

please print/type

Name _____
Last First Name & Middle Initial Nickname (for badge)

Affiliation _____

Address _____

City, State (Country) _____

Zip Code _____

Telephone number _____
include area/country & city code

Fax number _____
include area/country & city code

The advance registration fee is \$150.00. Registrations received after **September 17** will be processed at the on-site fee of \$200.00. After **September 30**, registrations will be processed on site only. Make checks payable to TRB/HSRML. Payment must be made in U.S funds, drawn on a U.S. bank or by international money order. VISA, MasterCard and American Express will also be accepted.

Cancellation received in writing between September 27–October 8 will be charged a \$50.00 processing fee. No refunds will be given after October 11. Please complete and return by September 17 with your payment to:
Reggie Gillum, Transportation Research Board, Box 289, Washington, DC 20055.

American Express MasterCard VISA

Card No. Exp. Date /

Signature _____

Check (payable to TRB/HSRML) Int'l Money Order (payable to TRB/HSRML) Purchase Order

